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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/613,951	07/11/2000	Robert G. Wendt	TPG 306	1942

7590 11/08/2002

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EXAMINER

PAIK, SANG YEOP

ART UNIT	PAPER NUMBER
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3742

DATE MAILED: 11/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/613,951	WENDT ET AL	
	<b>Examiner</b>	<b>Art Unit</b>	
	Sang Y Paik	3742	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 August 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 6, 7, 9-11, 13-15, 17-21 and 30-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chow (US 5,031,229) in view of Matsuda et al (US 5,571,749) or VonCampe (US 5,053,355).

Chow shows a vapor deposition structure having a vessel (20) made of boron nitride, a lid having a plurality of nozzle (19) and the heating system (24', 25') for heating the nozzle at the temperature higher than the crucible vessel. Chow, however, does not show a device that transports a strip to be deposited with the source material.

Matsuda et al or VonCampe shows that it is well known in the art to provide a roll strip that is transported through a deposition zone to be treated with a source material.

In view of Matsuda et al or VanCampe, it would have been obvious to one of ordinary skill in the art to adapt a system having the vaporizing vessel along with a roll strip so that the trip can be treated with the vaporizing vessel in a continuous manner to efficiently treat the desired strip.

With respect to claim 32 and 35, it would have been obvious to adapt Chow with the orifice diameter and length of the nozzle be within any desired range including the claimed range

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since the size and length can be set at any desired length to control the speed and amount of source material to be vaporized.

3. Claims 2-5, 12, 16, 22-24 and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chow in view of Matsuda et al or VonCampe as applied to claims 1, 6, 7, 9-11, 13-15, 17-21 and 30-35 above, and further in view of Colombo et al (US 5,820,681) or Swindt (US 3,345,059).

Chow in view of Matsuda et al or VonCampe discloses the system claimed except a thermal control shield disposed around the vessel.

Colombo et al shows a thermal shield (15, 30) which shields the vessel. Swindt also shows a crucible vessel with a thermal shield having an outer shell and a plurality of insulation layers.

In view of Colombo et al or Swindt, it would have been obvious to one of ordinary skill in the art to adapt Chow, as modified by Matsuda et al or VonCampe, with the thermal shield to prevent the loss of heat and maintain the desired heating temperature.

With respect to claim 4, Colombo et al further shows that the thermal heat shield is made of a tantalum foil. It would have been obvious to further adapt Chow, as modified by Swindt, with the outer shield made of tantalum since such material is known in the art to provide the heat shield.

With respect to claims 12, 16 and 22, Chow does not show the claimed ranges for the spaced apart nozzles and discharge openings. However, it would have been obvious to one of ordinary skill in the art to modify the distance between the nozzles and discharge opening sizes depending upon the rate and the volume of the material at which the user desired to produce.

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4. Claims 8 and 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chow in view of Matsuda et al or VonCampe and Colombo et al or Swindt as applied to claims 2-5, 12, 16, 22-24 and 26-29 above, and further in view of Finicle (US 5,158,750).

Chow in view of Matsuda et al or VonCampe and Colombo et al or Swindt discloses the system claimed except the vessel is made of graphite or pyrolytic boron nitride coated graphite.

Finicle shows a crucible vessel made of graphite with a top coat of pyrolytic boron nitride. In view of Finicle, it would have been obvious to one of ordinary skill in the art to adapt Chow, as modified by Matsuda et al or VonCampe and Colombo or Swindt, with the vessel made of graphite material that can provide a uniform heat distribution.

***Response to Arguments***

5. Applicant's arguments with respect to claims 1-35 have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y Paik whose telephone number is 703-308-1147. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teresa Walberg can be reached on 703-308-1327. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.

S. P. L.

Sang Y Paik  
Primary Examiner  
Art Unit 3742

syp  
November 4, 2002